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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/697,036

10/31/2003

Hiroki Nakajima

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10/16/2006

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EXAMINER

MONSHIPOURI, MARYAM

ART UNIT

PAPER NUMBER

1656

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/697,036

Applicant(s)

NAKAJIMA, HIROKI

Examiner

Maryam Monshipouri

Art Unit

1656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
4a) Of the above claim(s) 11-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date filed 3/06
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☒ Other: see attachment.

Applicant's response to restriction requirement filed 7/24/2006 is acknowledged. Applicant elected Group I(b), claims 1-0 and 18-19 with partial traverse. IN partial traversal arguments applicant requested the examination of SEQ ID NO:14 which encodes SEQ ID NO:13 in the instant claims.

Applicant request was fully considered and accepted. SEQ IOD NO:14 will be examined in the instant claims.

Claims 11-14 are withdrawn. Claims 15-22 are canceled.

DETAILED ACTION

Claims 1-10 are under examination on the merits.

Specification

The disclosure is objected to for recitation of hyperlink language in the text. (see for example page 25). Applicant is advised to delete said language in the entire text of the specification. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "hybrid-sensor kinase" in claim 1 and its dependent claims 2-10 is unclear. Applicant has not defined this term specifically in the specification. It is unclear what is the difference between osmosensing histidine kinase and "hybrid-sensor kinase".

Claims 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "derived from" in claim 8 is unclear. It is indefinite as to whether the polynucleotide encoding said histidine kinase is isolated from *Botryria fuckeliana* or is a variant of a polynucleotide obtained from *Botryria fuckeliana*. Also, in claim 8 it is vague whether applicant is referring to the DNA encoding the histidine kinase or the kinase itself. If applicant is referring to the kinase itself then there is no antecedent basis for said term in claim 1. Appropriate clarification is required.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Cui et al. (Fungal Genetics and Biology, 36, 187-198, ¹⁹⁹⁸2002, cited in the IDS). Cui in table 9 teaches a series of *B. fuckeliana* mutant strains wherein wild type *Daf1* gene of *B. fuckeliana* has been replaced with its variants comprising at least one mutation in the coiled coli region (such as instant SEQ ID NO:1 having no transmembrane region or its variant having no transmembrane region and one additional mutation set forth as SEQ ID NO:13, see the attached sequence alignment), complementing their hybrid sensor deficiency, rendering said host cells originally lacking at least on hybrid sensor kinase, resistant to dicarboximide antifungal compounds, anticipating claims 1-3 and 5-10.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cui et al. (cited above). As stated above, Cui, in table 9, teaches a series of *B. fuckeliana* mutant strains wherein wild type Daf1 gene of *B. fuckeliana* has been replaced with its variants comprising at least one mutation in the coiled coli region (such as SEQ ID NO:1 having no transmembrane region or its variant having no transmembrane region and one additional mutation SEQ ID NO:13, see the attached sequence alignment), complementing their hybrid sensor deficiency, rendering said host cells originally lacking at least on hybrid sensor kinase, resistant to dicaboximide antifungal compounds. Cui does not teach *S. cerevisiae* (budding yeast), which inherently lacks at least one hybrid sensor kinase, transformed with a DNA encoding a histidine kinase lacking transmembrane region in a functionla form.

In Figure 6, Cui teaches that histidine kinase pathway in *B.fuckelina* and *S. cerevisiae* are very similar both pathways involving MAK kinases and transcription factors etc. In section 4.2, page 195, Cui also suggest that enzymes (and their encoding DNA) involved in each step of the histidine kinase pathway are also homologous (see for example, Daf1, Os-1 and Sln1).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to start with SEQ ID NO:1 (or Daf1) of Cui and insert in it *S.cerevisae* host cells either lacking Sln1 gene (knock out host cells) or having less active Sln-1, in order to see if said yeast cells become osmosensitive. Such information

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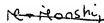
will help identify the exact homology that exists between the enzymes/genes involved in *S. cerevisiae* and *B. fuckelina* histidine kinase pathways leading to consensus structure(s) for enzymes/genes involved in plant fungicidal resistance and osmosensitivity, rendering the invention obvious.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maryam Monshipouri whose telephone number is (571) 272-0932. The examiner can normally be reached on 7:00 a.m to 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kerr Kathleen can be reached on (571) 272-0931. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Maryam Monshipouri Ph.D.
Primary Examiner
